

REMARKS

In the Action, claims 2-9 are rejected. In response, claims 2-7 are amended and claims 10-12 are added. The pending claims in this application are claims 2-12, with claims 2 and 5 being independent.

Claim 2 is amended to recite the method step for producing the coated paper and to clarify that the amount of the polyvinyl alcohol is contained in the composition in an amount of 0.1 parts by weight to less than 2.0 parts by weight based on 100 parts by weight of the pigment. Claims 3 and 4 are amended to properly depend from claim 2. Independent claim 5 is also amended to recite the method step and to clarify that the amount of the polyvinyl alcohol is based on 100 parts by weight of the pigment. Claims 3-9 are amended to obviate the rejections under 35 U.S.C. § 112.

New claims 10-12 are added to depend from claim 2 to recite further features of the invention that are not disclosed or suggested in the art of record in combination with the features of claim 2.

A new Abstract is enclosed as requested.

In view of these amendments and the following comments, reconsideration and allowance are requested.

Rejection of Claims 2-9

Claims 2, 3 and 5-9 are rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,030,325 to Saji et al. in view of U.S. Patent No. 4,154,899 to Hershey et al. Saji et al. is cited for disclosing a method of producing a coated paper using a coating composition including a pigment and an adhesive where the adhesive can be a polyvinyl alcohol.

The present invention is directed to a method of producing a coated paper for printing using a coating color that enables an increase in the coating weight while maintaining the transferability of the coating from the coating roller to the paper and providing a coated paper with excellent printing properties. In the prior processes, it is difficult to increase the coating weight while still maintaining good transferability from the coating roller to the paper.

Applicants have found that the coating weight of the color coating can be increased by a film transfer method using a coating roller to attain a coating weight on one side of the paper in an amount of 7 g/m² or more. In particular, Applicants have found that the coating color can be applied at this coating weight using a color coating containing 0.1 part to less than 2 parts by weight polyvinyl alcohol per 100 parts by weight of the pigment in the coating color. The polyvinyl alcohol in the claimed amounts is used in addition to the adhesives that are commonly used in the prior processes.

The addition of the polyvinyl alcohol in the claimed amounts to the adhesives improves the transferability of the coating color from the applicator roller of the film transfer coating onto the base paper. In addition, the polyvinyl alcohol increases the coating weight while maintaining the coating efficiency and enables the production of coated papers for printing with improved printability. These features are not disclosed or suggested in the art of record.

On page 9, lines 4-5 of the specification, the film transfer coating is disclosed as using a transfer roll coater or a metalling size press coater. The transfer roller coater is a coater that transfer a coating color between rolls using a plurality of rolls with normal rotation while applying nip pressure. The coater weighs and smoothes the coating color. An applicator roller then coats the base paper. The metalling size press coater is another roll coater having blades or hydrobar coater heads.

Saji et al. does not relate to a film transfer method using a coating roller or the coating color of the claimed invention. The Action refers to the disclosure of polyvinyl alcohol in Saji et al. However, Saji et al. clearly discloses polyvinyl alcohol as being a conventional adhesive. Saji et al. specifically discloses that the amount of the adhesive is adjusted to a range of 50 to 50 parts by weight based on 100 parts by weight of the pigment.

Saji et al. does not disclose or suggest the use of polyvinyl alcohol as an additive in conjunction with the conventional adhesives in the claimed amounts to improve the transferability of the coating from the coating roller to the paper to enable a coating weight of 7 g/m² or more. Saji et al. only discloses polyvinyl alcohol as a conventional adhesive. Accordingly, Saji et al. provides no guidance to one of ordinary skill in the art to attain the advantages of the present invention.

Hershey et al. is cited for disclosing a method of producing a coated paper for printing where the coating can contain 1.5 parts by weight polyvinyl alcohol per 100 parts by weight of the pigment. Hershey et al. relates to a blade coating method and does not disclose or suggest the film transfer method of the claimed invention. As noted above, Applicants have discovered that the addition of polyvinyl alcohol in the claimed amounts in addition to the adhesive provides improved transferability from the coating roller to the paper to enable the claimed coating weight. Accordingly, Hershey et al. provides no motivation or incentive to one of ordinary skill in the art to include polyvinyl alcohol in the process of Saji et al. Accordingly, it is not obvious to combine the teachings of Hershey et al. and Saji et al.

The combination of Saji et al. and Hershey et al. do not suggest the claimed method of applying a coating color containing a pigment and an adhesive and further containing 0.1 to less than 2 parts by weight polyvinyl alcohol per 100 parts by weight of the pigment and applying the coating color by a film transfer method to attain a coating weight of 7 g/m² or more. The combination of Saji et al. and Hershey et al. also fail to disclose the method of

claim 5 of applying by a film transfer method a coating color containing a pigment and an adhesive and 0.1 to less than 2 parts by weight polyvinyl alcohol as an auxiliary component and less than 2 parts by weight of starch as an adhesive where the amounts are based on 100 parts by weight of the pigment.

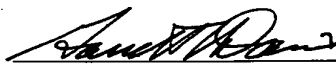
Claims 6-9 depend from claim 5 and are allowable as depending from an allowable base claim and for reciting additional features of the invention. For example, the combination of Saji et al. and Hershey et al. do not disclose the method of producing the coated paper where the coating color includes 18 parts by weight or less of the adhesive per 100 parts by weight of the pigment in combination with the features of claim 5 where the coating color includes 0.1 to less than 2 parts by weight polyvinyl alcohol and less than 2 parts by weight of a starch. The combination of the cited patents also fail to disclose the method of claim 7 of applying the coating color at a weight of 7 g/m^2 on each side of the base paper, or applying the color coating using a transfer roll coater as in claim 8, or the paper obtained by the method of claim 5 as in claim 9 in combination with the features of claim 5. Accordingly, the claims are allowable over the art of record.

Claim 4 is rejected as being obvious over Saji et al. in view of Hershey et al. and further in view of U.S. Patent No. 4,258,104 to Lee et al. Lee et al. is cited for disclosing a method of coating a paper with an adhesive and pigment that can be used for gravure printing. Lee et al. does not disclose or suggest a film transfer coating method. Lee et al. discloses only blade coating. Furthermore, there is no disclosure in Lee et al. of the use of polyvinyl alcohol as an additive in addition to the adhesive and pigment as in the present invention. Accordingly, Lee et al. does not provide the deficiencies of Saji et al. and Hershey et al. Thus, claim 4 is not obvious over the combination of Saji et al., Hershey et al. and Lee et al.

New claims 10-12 are also allowable as depending from an allowable base claim and for reciting additional features of the invention. For example, the art of record does not disclose the method of claim 2 where the coating color includes 5-50 parts by weight of the adhesive in combination with the claimed amount of the polyvinyl alcohol. The cited art further fails to disclose the method of claim 11 where the coating color includes 10-30 parts by weight of the adhesive or the coating color comprising 40-70 wt% solids as in claim 12 in combination with the features of claim 2.

In view of these amendments and the above comments, reconsideration and allowance are requested.

Respectfully submitted,


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